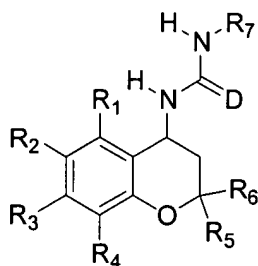


Amendments to the claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of claims:

Claim 1 (original): Benzopyran derivatives of the general formula



(I)

wherein:

D represents S or O;

R₁, R₂, R₃ and R₄ are independently hydrogen, halogen, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, hydroxy, C₁₋₆-alkoxy, C₁₋₆-alkoxy-C₁₋₆-alkyl, nitro, amino, cyano, cyanomethyl, perhalomethyl, C₁₋₆-monoalkyl- or dialkylamino, sulfamoyl, C₁₋₆-alkylthio, C₁₋₆-alkylsulfonyl, C₁₋₆-alkylsulfinyl, formyl, C₁₋₆-alkylcarbonylamino, R₈arylthio, R₈arylsulfinyl, R₈arylsulfonyl, C₁₋₆-alkoxycarbonyl, C₁₋₆-alkoxycarbonyl-C₁₋₆-alkyl, carbamoyl,

carbamoylmethyl, C₁₋₆-monoalkyl- or dialkylaminocarbonyl, C₁₋₆-monoalkyl- or dialkylaminothiocarbonyl, ureido, C₁₋₆-monoalkyl- or dialkylaminocarbonylamino, thioureido, C₁₋₆-monoalkyl- or dialkylaminothiocarbonylamino, C₁₋₆-monoalkyl- or dialkylaminosulfonyl, carboxy, carboxy-C₁₋₆-alkyl, acyl, R₈aryl, R₈aryl-C₁₋₆-alkyl, R₈aryloxy;

R₅ and R₆ are each independently hydrogen, C₁₋₆-alkyl or, R₅ and R₆ taken together with the carbon atom to which they are attached form a 3- to 6- membered carbocyclic ring;

R₇ is 2-, 3- or 4-pyridyl optionally mono- or polysubstituted by R₁ or

R₇ is 2- or 3-thienyl optionally mono- or polysubstituted substituted by R₁ or

R₇ is phenyl mono- or polysubstituted by R₁ with the exception of R₇ representing C₆H₅;

R₈ is hydrogen, halogen, C₁₋₆-alkyl, C₃₋₈-cycloalkyl, hydroxy, C₁₋₆-alkoxy, nitro, amino, cyano, cyanomethyl, perhalomethyl;

or a salt thereof with a pharmaceutically acceptable acid or base, or any optical isomer or mixture of optical isomers, including a racemic mixture or any polymorphic and tautomeric form.

Claim 2 (previously presented): The benzopyran derivative according to claim 1 wherein D represents S.

Claim 3 (previously presented): The benzopyran derivative according to claim 1 selected from :

R/S-4-(3-Chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(3-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(4-Chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(4-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(4-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(3-Cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(3-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(3-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(4-Cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(4-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(4-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(3-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(3-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-4-(3-Chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(3-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(4-Chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(4-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(4-chlorophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(3-Cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(3-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(3-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(4-Cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(4-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(4-cyanophenylaminothiocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(3-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(3-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(4-nitrophenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(3-trifluoromethylphenylaminothiocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(2-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(2-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(3-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(3-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(3-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(4-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(4-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(4-methoxyphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(2-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(2-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(2-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(3-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(3-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(3-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-3,4-Dihydro-2,2-dimethyl-6-fluoro-4-(4-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Chloro-3,4-dihydro-2,2-dimethyl-4-(4-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-6-Bromo-3,4-dihydro-2,2-dimethyl-4-(4-methylphenylaminocarbonylamino)-2*H*-1-benzopyran,

R/S-4-(2-Chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(2-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(2-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(3-Chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(3-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(3-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-4-(4-Chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-6-fluoro-2*H*-1-benzopyran,

R/S-6-Chloro-4-(4-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran,

R/S-6-Bromo-4-(4-chlorophenylaminocarbonylamino)-3,4-dihydro-2,2-dimethyl-2*H*-1-benzopyran.

Claim 4 (canceled).

Claim 5 (currently amended): The pharmaceutical composition comprising a benzopyran derivative according to claim 1 or pharmaceutically acceptable salt thereof with a pharmaceutically acceptable acid or base or any optical isomer or mixture of optical isomers, including a ~~racemic~~ racemic mixture or any tautomeric form together with one or more pharmaceutically acceptable carriers of diluents.

Claim 6 (canceled).

Claim 7 (previously presented): The pharmaceutical composition according to claim 5 in the form of an oral dosage unit or parental dosage unit.

Claim 8 (currently amended): The pharmaceutical composition according to claim 5 ~~wherein~~ in the form of an oral dosage unit or parental dosage unit containing said benzopyran derivative is ~~administered as a dose~~ in a range from about 0.05 to 1000, ~~preferably from about 0.1 to 500 and especially in the range from 50 to 200 mg per day.~~

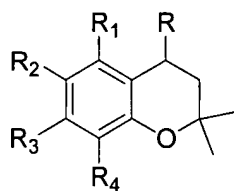
Claims 9-13 (canceled).

Claim 14 (previously presented): The method of treating diseases of the endocrinological system, such as hyperinsulinaemia and diabetes in a subject in need thereof comprising administering an effective amount of a benzopyran derivative according to claim 1.

Claim 15 (previously presented): The process for the manufacture of a medicament, particular to be used in the treatment of diseases of the endocrinological system, such as hyperinsulinaemia and diabetes which process comprising bringing a compound of formula (I) according to claim 1 or a pharmaceutically acceptable salt thereof into a galenic dosage form.

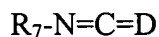
Claim 16 (original): A method of preparing a benzopyran derivative of formula (I) which comprises :

– reacting a compound of formula (II)



(II)

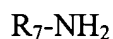
wherein R represents NH₂ and R₁, R₂, R₃ and R₄ are defined as for formula (I) with an isothiocyanate of formula (III)



(III)

wherein D represents S or O and R₇ is defined as for formula (I), to form a benzopyran derivative of formula (I); or

– reacting a compound of formula (II) wherein R represents -N=C=S and R₁, R₂, R₃ and R₄ are defined as for formula (I) with an amine of formula (IV)



(IV)

wherein R₇ is defined as for formula (I), to form a benzopyran derivative of formula (I).

Claim 17 (new): The pharmaceutical composition according to claim 5 in the form of an oral dosage unit or parental dosage unit containing said benzopyran derivative in a range from about 0.1 to 500.

Claim 18 (new): The pharmaceutical composition according to claim 5 in the form of an oral dosage unit or parental dosage unit containing said benzopyran derivative in a range from about 50 to 200 mg per day.

Claim 19 (new): The method of claim 14 wherein the benzopyran derivative is administered as a dose in a range from about 0.05 to 1000 mg per day.

Claim 20 (new): The method of claim 14 wherein the benzopyran derivative is administered as a dose in a range from about 0.1 to 500 mg per day.

Claim 21 (new): The method of claim 14 wherein the benzopyran derivative is administered as a dose in a range from about 50 to 200 mg per day.